

Academic achievement in public higher education quality – A study on the effects of teachers’ commitment, teaching and evaluation methodologies in Nursing and Management degrees students.

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Abstract

The huge development of science and technology and the political, social and economic changes that characterize post-modern societies, demand from education systems a quality formation for all citizens. The great challenge of the XXI century in education is not only to ensure the acquisition of a range of varied and current competencies, but also to guarantee the quality of learning. Therefore, the quality of education is a major concern to governments, politicians, academics and researchers and has been an issue widely discussed in scientific meetings and studied in several education research programs in different countries in the Western world.

The results of research on education quality show a positive correlation between students’ academic performance and education quality. However, we must go further, it is necessary to research quality indicators, to understand how students perceive education quality.

In order to achieve these goals, we developed an exploratory study with students from different higher education institutions in Portugal. Data sampling consists in students of different courses of higher education in Alentejo (Portugal). Data collection was conducted through a survey questionnaire.

This work presents the analysis of students’ representations of quality, in Nursing and Management degrees in the University of Évora and in Beja

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Polytechnic Institute, under three dimensions: teacher's commitment, teaching methodology and evaluation methodologies, as to relate the influence of these variables with the academic success of students.

Teaching Quality

Improving the quality of schools has been, in recent years, a concern of European countries (Eurydice, 2004). Doherty (1997) suggests that it was the publication of the book *Education and Training for the Twenty-First Century* that did emerge a huge interest in issues of "quality" in education (formal). However, it is due to research conducted more recently, supported on new prospects and involvement of a wider range of stakeholders and international bodies on matters relating to assessment, measurement and quality assurance in education (Bertolin, 2009) that the issue Education Quality and particularly in higher education, gained a new impetus. Among the new concerns of various actors is the idea of the responsibility of schools in accountability to society (Broadfoot, 2000), ie, concern about accountability.

One consensus that seems to exist on the theme "Quality in higher education" is that quality is a complex concept, dynamic, historically constructed, multifaceted, multidimensional, multileveled (Bertolin, 2009), "unstable" (Sahney et al, 2004), which reflects different perspectives of individuals and society (Papadopoulos, 1994) and which is open to change and evolution, as a result of new information, new contexts and understandings about the nature of the challenges of education (UNICEF, 2000: 5).

Terms such as competence, efficiency, equity often appear as synonyms or associates of education quality. In a document presented at the International Working Group on Education in Florence, Italy, June 2000, UNICEF pointed out that, until recently, much of the discussion about what quality education is, has been focused on inputs of the system, such as infra-structures, the teacher-student ratios and the curriculum but, in recent years, attention has increased given to the educational process, studying, for example, how teachers and administrators use the means to provide meaningful learning experiences to students (UNICEF, 2000: 13).

Moreover, there is also, increasingly, especially for some stakeholders of education/training, a growing concern to relate the quality of the *results* obtained with the process. We are thus faced with a systemic concept of quality assessment, which requires looking at multiple dimensions of the educational phenomenon and that involves multiple agents (or actors) and believes that all elements of an education system can contribute to the quality of the system (Scott et al, 2006).

In this paper, the relevance of the study of "education quality" lies in its relation to the issue of academic achievement and academic success of students, since studies conducted in various countries point to a strong positive correlation between academic success of students and the education quality available to them (Ethier, 1989; Newmann, Marks e Gamoran, 1995, Chua,

2004; Bonito e Trindade, 2008; Bonito et al, 2008; Pires, Fialho, Saragoça & Bonito, 2008). Being the teaching performance one of the most crucial factors in the quality of education systems (Barber and Mourshed, 2007) and the factor that has more influence on student performance (Darling-Hammond, 2000), so the only way to improve school results is to improve the teaching process (Barber & Mourshed, 2007).

Our study finds that the quality of teaching can be assessed by the various actors involved in the educational processes. Among them are obviously the students, because, as Mitchell notes et al (2006), evaluation of teaching by students is legitimized by the fact that, while learning first agents and users, have the right to participate, although to some extent, in the teaching evaluation (Felder and Brent, 2004). Following this line, Murray (1984) goes even further, to argue that just as students are able to judge whether the teacher's comments to their surveys or studies are useful or not, or if the supporting materials used for the sake of learning are appropriate or not. However, assessing the education quality considering the students' views is particularly relevant when we take the position advocated by Fraser (1991), sometimes the perceptions of students are more determinants of their behavior than the actual situations they experience.

Teaching Commitment

The observation of reality, the experience and the scientific research shows that the education quality depends in part on teachers' commitment in fulfilling their "craft." Diverse scientific literature (eg, Crosswell, 2006; Huberman, 1997; Nias, 1981) stated that the dedication, commitment, the teacher's commitment are the most critical factors for success and the future of education.

The teachers' commitment influences the levels of absenteeism and, consequently, the students' performance and their attitudes toward school (Firestone, 1996; Graham, 1996; Louis, 1998; Tsui and Cheng, 1999). Indeed, research conducted within the USA and UK show that the development of schools depends on the commitment and consistency of the professional development of teachers, their work together at school and in partnership with other schools, to improve the quality of teaching and learning and thus raise standards of performance (SICI, 2007: 8).

The teachers' commitment is, moreover, one of the features of the new teacher professionalism (Malm, 2009). In a doctored study, Leanne Crosswell (2006) supports that the teachers' behaviors are influenced by the commitment that they assume in their professional lives and that this manifests itself in several interdependent aspects: the organization (university), students, career progress, professional knowledge base, the faculty involvement itself, and also personal factors (such as values, beliefs and ideologies).

A high level of adherence, engagement and commitment of teachers in fulfilling the duties inherent to the mandate that society gives them (Teixeira, 2000) - commitment to the students, their career project, their profession, professional knowledge base and the school/organization in which they work – is therefore one of the conditions for the participatory process to result in school improvement (SICI, 2007). These levels of engagement and commitment of the teacher are certainly variables over their career, depending on factors such as student behavior, school climate, support (administrative and otherwise) they receive, conditions of employment, requests from parents and guardians of students, national education policies (Day, 2000, Cheng and Tsui, 1999) and to a large extent, the type of management and leadership of the organization.

Even though the academic environment has a different impact on each student, depending on the experiences of each one, it is believed that whatever the characteristics of each student, some variables of the academic context are enough required to students (Upcraft and Schuh, 1996), influencing not only their academic achievement, but also their perceptions about the school they attend, which are particularly important to socialization and academic integration of first-year students (Weidman, 1989; Torre, 1992). In this line, Chickering (*apud* Santos and Almeida, 2001: 206) highlights the role played by factors such as institutional objectives, the size of the organization, the interactions established among students and members of the university community, the teaching practices and the services and activities available to students in school.

Teaching Methodologies

Despite several possible understandings given the concept of data quality, regarding the education quality, is the recurring importance attached to human and material resources and the quality indicator that is based more on how teaching and learning are developed.

The organization of teaching and learning process, the methods used, the teaching resources, are factors considered valid for analysis of school quality, because certain types of teaching practices influence the results obtained by students. The methods and means of teaching can be very diverse, from the perspectives considered more traditional to the perspectives more focussed on students.

Several studies point towards innovative methodologies, work in groups or in pairs have positive influence on academic achievement, such as a case study developed in teaching and learning of Programming at the Universities of Aveiro and Strathclyde (Glasgow, UK) in the 1st year and carried out by Huet and Tavares (2005).

An extensive body research confirms, for example, the effectiveness of cooperative learning. In contrast with conventional teaching, students subjected

to the cooperative method tend to get better results in tests, more persistence in continuing studies, better analytical skills, creative and critical, deeper understanding of the material, more intrinsic motivation to learn, better relation with peers, improving positive attitudes towards the issues under study, lower levels of anxiety, as well as higher self-esteem (Johnson et al. 1998; McKeachie 1999).

Assessment Methodologies

Research undertaken in recent years highlights the role that evaluation can play in teaching and learning improvement (Figari & Achouche, 2001; Shepard, 2000, 2001; Stiggins, 2004).

It should be stressed that the conception of assessment, at this juncture, is not just the classification dimension, taking as an organized set of procedures aimed at monitoring the regulator of any learning and incorporating desired, therefore, the verification of their achieving (Roland, 2003). This reconceptualization is based on three fundamental principles: i) the need to resort to various methods and assessment tools, appropriate to the diversity of learning which are intended to promote and to the nature of each one of them, ii) the character essentially formative and the positive, putting in evidence that aspects in which the students' learning need to be improved, pointing out ways to overcome the difficulties, valuing the interests, knowledge and skills of students; iii) the interpretation, reflection, decision and information about the teaching and learning processes, with the main function to help promote or improve student learning.

These principles should be implemented in three modes of assessment: diagnostic, formative and summative, which serves purposes quite distinct but complementary that point to a new culture of evaluation, assumed as a process to learn and to teach better and accordingly, may improve education quality and hence the quality of learning and the education system, globally considered (Fernandes, 2007).

Black & Wiliam (1998a, 1998b), in an article of reviewing literature about the formative assessment, they conclude that: i) the systematic practice of formative assessment substantially improves the students' learning, ii) students who benefit most from assessment practices training are those with more learning difficulties, and iii) students who attend classes in which formative assessment is predominant, perform better in external evaluation tests (eg, tests) than students who attend classes in which the summative assessment is predominant.

However, in terms of teaching practices, the summative assessment is dominant, perhaps by having a social impact higher than the other modalities, because it appears associated with making decisions related to the academic progress of students or their certification. As emphasized by Pacheco (1996) "despite the summative assessment being a terminal stage of a process, and

although this type of evaluation becomes an administrative requirement and functional for the system it is, however, the formative assessment must be focused on a sense of an intervention aimed at improving the quality of education” (p. 134).

Case study

This work falls within a research project funded by the FCT, entitled "From Quality Education to Academic Success: A Longitudinal Study on Students' Perspective of Secondary and Higher Education. Search for Practices for an Effective Yield Academic Success”, which is being developed by a multidisciplinary team of faculty researchers from the Centre for Research in Education and Psychology (CIEP) of the University of Évora.

In this paper we analyze the data regarding the questions of closed answer comprising 33 items distributed across three dimensions: "Commitment of teachers" (9), "Teaching methodologies" (17) and "Methods of evaluation" (7). Seeking thus to evaluate the influence handed by the three variables as indicators of the quality of teaching, academic performance of students of Nursing and Management of higher education institutions in the region of Alentejo (Portugal).

Instruments and Procedures

During the data collection process, the construction and implementation of a structured questionnaire in the form of an opinion survey were chosen, which we named the Students' Representations Questionnaire on Quality of Education (REQUE). This is a self-report questionnaire comprising 67 items on a four-point scale response: *strongly disagree, disagree, agree, agree completely*.

The final version of the surveys was obtained by consensus among members of the research project, after being subjected to a panel of outside experts (external validation), who gave indications that clarified the language and improve the construction of the items. Data collection occurred between May and June 2008 and the questionnaire was applied directly by the team of researchers in the classroom, after obtaining the necessary permits.

To assess the reliability of the questionnaire, there was considered the calculating of the Cronbach alpha. There was also determined the squares of the values of the multiple correlation for each item.

In this paper it is proposed to use the algorithm CART - Classification and Regression Trees (Breiman, Friedman, Olshen & Stone, 1984) as a method of nonparametric regression for the prediction of academic achievement measured by P. Average currently has in progress (by estimate). CART regression trees are mainly used to explain and predict a given attribute. This method, widely used in multidimensional studies, has the advantage of being successful in

situations where the explanatory variables are a mixture of nominal variables, ordinal and continuous.

Data was analyzed using *SPSS*, version 17.0.

Sample

In this article we considered the Nursing and Management courses, as ground for research, of the University of Évora and of the Beja Polytechnic Institute, with the criterion that both existed in the two schools. Of the population of these courses, the sample is of 256 students, distributed as follows: 135 Nursing (53%) and 121 Management (47.0%). These students were attending the 1st year of the 1st Cycle of Graduated Studies.

About 71% of respondents were female, with an average age of 21.8 years. The male students are on average one year older than their colleagues, having met the modal value of 19 for both sexes, with a range between 18 and 49 years of age.

Results and discussion

The higher value of Cronbach's alpha was found for the dimension of *Teaching Methodologies* ($\alpha = .839$), followed by the dimensions of Evaluation Methodologies ($\alpha = .640$) and *Teacher Commitment* ($\alpha = .635$).

Regarding the results obtained for the dimension of ***Commitment of Teachers*** (Table 1), one can see that, unlike the other categories, Management students present agreement values higher than those of their colleagues, particularly, in 6 of the 9 items used, although the difference between the mean values is significant only for item 6. The averages for the item Teachers are assiduous ($M^{\text{Management}} = 3.12$; $M^{\text{Nursing}} = 2.95$; $p = .031$) showed values quite positive, in agreement with the high values that were found for the items numbered 1 through 7. The items that contradict this positive trend were 8 (In general, the teachers know the names of their students) and 9 (Students establish personal relationships with teachers), with averages, respectively of $M^{\text{Management}} = 2.42$ and $M^{\text{Nursing}} = 2.52$ and of $M^{\text{Management}} = 2.33$ and $M^{\text{Nursing}} = 2.27$.

Students from both courses seem to agree that their teachers are committed ($M^{\text{Management}} = 2.94$ and $M^{\text{Nursing}} = 3.00$) and present enough willingness to answer questions ($M^{\text{Management}} = 3.26$ and $M^{\text{Nursing}} = 3.26$). However, they admit that the teachers do not know their name nor establish personal relationships with them, but feel that, in general, such relationships are appropriate ($M^{\text{Management}} = 3.13$ and $M^{\text{Nursing}} = 3.01$).

As can be seen in Table 2 regarding the ***Teaching Methodologies*** dimension, students in the Nursing course have higher values of concordance in 15 of the 17 items. Significant differences were found in 7 items, coming to be: 15 - *The theoretical component in classes is combined with the practical component* (p

= .009) 19 – *In the course, practical demonstrative activities of knowledge are develop* ($p = .000$); 20 – *In the course practical activities for the preparation of reasoning are develop* ($p = .008$), 22 – *Teachers call for students' critical thinking* ($p = .019$); 23 – *Teachers, in general, relate the contents of a subject with the ones of other subjects* ($p = .000$); 24 – *Teachers stimulate students' creativity* ($.003 p =$); and 25 – *Teachers encourage students to produce knowledge* ($p = .000$).

Even though the *Teaching Methodologies* dimension was composed of 17 items, in only two of them were found values below 2.5, which come to be the items 10 – *Teachers use the ideas and knowledge of students to the teaching of subjects* ($M^{\text{Management}} = 2.29$ and $M^{\text{Nursing}} = 2.37$) and 13 – *The pace of classes gives enough time for me to change my thinking* ($M^{\text{Gestão}} = 2.27$ and $M^{\text{Nursing}} = 2.30$).

In the *Assessment Methodologies* dimension (Table 3), all mean values of agreement were higher for the Nursing course, having been found significant differences for items 30 (*In general, the evaluation is conducted fairly*) ($p = .000$) and 31 (*In general, the assessment procedures are negotiated with the students*) ($p = .001$). This last item deserves special attention because it has the lowest average scores in this study ($M^{\text{Management}} = 1.85$ and $M^{\text{Nursing}} = 2.19$), being the only, in this dimension, where students showed disagreement.

Students feel that the evaluation procedures are not subjected to prior negotiation ($M^{\text{Management}} = 1.85$ and $M^{\text{Nursing}} = 2.19$), even though they feel that they are suitable ($M^{\text{Management}} = 2.69$ and $M^{\text{Nursing}} = 2.80$) and disclosed in a timely manner ($M^{\text{Management}} = 2.84$ and $M^{\text{Nursing}} = 2.99$), but differ significantly in the perception of fairness with which the evaluation is performed ($p = 0.00$).

The results concerning the relative influence of each explanatory variable of **academic performance of students** (Figure 1) shows that the variable *teaching methodologies* is that it takes more importance in predicting academic performance, followed by the *assessment methodologies* and finally the *commitment of teachers* of the course.

Final Thoughts

We concluded how students interpret and obtain *quality education*, with the results seem to indicate a general degree of satisfaction quite positive. The existence of 33 items with values greater than 2.5 (85%) is revealing. Nursing students are generally more satisfied with the quality of education given to them (24 of 33 items, 72.7%), and in an analysis to the 10 items where differences found were significant ($p < .05$), we found that in 9 of these, the mean values are higher for students of these courses.

It follows further that the variable teaching methods is the most significant influence on academic performance. Thus, these students, elderly people, with

maturity and long experience as students (at least 12 years of schooling before), value essentially how teachers lead them to the learning of set as the most important dimension of the three considered of their academic performance. The fact that many students, particularly those who have the status of worker-student can not attend many classes and can opt for the assessment by examination (instead of submitting to the mode of continuous assessment), may justify the minor evaluation methodologies. Moreover, the results show that students do not value highly the importance of the commitment of teachers as a determinant of quality of education provided and therefore the academic performance of students. The relational distance which we believe, still exists among many of the students surveyed and their teachers and the consequent ignorance of the nature of their work may help us explain these results.

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Table 1
Responses from students in higher education regarding Teachers' Commitment

Items	Courses	N	Mean	Std. Deviation	t	Sig. (2-tailed)
1. Teachers, in general, are committed in teaching classes	Nursing	135	3.00	.457	.872	.384
	Management	119	2.94	.615		
2. In general, relations between students and teachers are adequate	Nursing	135	3.01	.553	-1,915	.057
	Management	121	3.13	.482		
3. Teachers encourage students' participation in class	Nursing	135	2.85	.652	-1,152	.251
	Management	121	2.94	.596		
4. In general, teachers are available to answer students' questions	Nursing	135	3.26	.598	-,069	.945
	Management	121	3.26	.602		
5. Teachers respect the opening hours for students	Nursing	135	2.61	.847	-1,887	.060
	Management	120	2.80	.774		
6. Teachers are assiduous	Nursing	133	2.95	.638	-2,169	.031
	Management	120	3.12	.537		
7. Teachers are punctual	Nursing	132	2.86	.607	-,979	.329
	Management	119	2.93	.634		
8. In general, teachers know their students' names	Nursing	134	2.52	.743	1,143	.254
	Management	120	2.42	.729		
9. In general, students establish personal relationships with teachers	Nursing	134	2.27	.777	-,686	.493
	Management	121	2.33	.650		

Table 2
Higher education students' answers regarding the Teaching Methodologies

Items	Courses	N	Mean	Std. Deviation	t	Sig. (2-tailed)
10. Teachers use the students' ideas and knowledge in the teaching of subjects	Nursing	134	2.37	.763	.817	.415
	Management	119	2.29	.774		
11. The pace of classroom facilitates learning	Nursing	128	2.58	.671	.677	.499
	Management	117	2.52	.638		
12. Course teachers explain the subjects clearly	Nursing	135	2.88	.624	1,682	.094
	Management	119	2.75	.641		
13. The pace of lessons gives me	Nursing	133	2.30	.807	.300	.764

enough time to change my thought	Management	118	2.27	.747		
14. In general, the teaching methodologies applied are suited to learning	Nursing	133	2.83	.657	1,756	,080
	Management	121	2.69	.620		
15. The theoretical component in classes is combined with the practical component	Nursing	132	2.99	.636	2,633	,009
	Management	114	2.78	.621		
16. In classes there are presented various theories and alternative models for explaining the same phenomenon	Nursing	133	2.57	.699	-,268	,789
	Management	121	2.60	.702		
17. In the classroom, the historical context of theories and models in study is made	Nursing	134	2.76	.727	1,210	,228
	Management	120	2.66	.615		
18. In the classroom, the students' reflective activity on matters is encouraged	Nursing	129	2.95	.577	,987	,325
	Management	115	2.87	.629		
19. Practical activities as proof of knowledge are develop in the course	Nursing	135	3.01	.707	4,534	,000
	Management	120	2.62	.663		
20. Practical activities for the preparation of reasoning are developed in the course	Nursing	127	3.00	.577	2,693	,008
	Management	115	2.79	.628		
21. Teachers present in class the most recent knowledge of the topics discussed	Nursing	135	2.78	.769	-,545	,586
	Management	120	2.83	.589		
22. Teachers appeal to students' critical thinking	Nursing	135	2.95	.662	2,367	,019
	Management	121	2.75	.662		
23. Teachers, in general, relate the content of a subject with other subjects	Nursing	135	2.92	.561	5,038	,000
	Management	120	2.53	.660		
24. Teachers stimulate students' creativity	Nursing	134	2.80	.713	3,030	,003
	Management	121	2.54	.659		
25. Teachers encourage students to produce knowledge	Nursing	132	3.09	.531	4,014	,000
	Management	115	2.79	.642		
26. Teachers encourage students' ability to create alternative solutions to problems	Nursing	132	2.73	.740	1,727	,085
	Management	120	2.58	.643		

Table 3
Higher education students' answers regarding Assessment Methodologies

Items	Courses	N	Mean	Std. Deviation	t	Sig. (2-tailed)
27. The methods of evaluation are combined with the teaching methodologies	Nursing	135	2.69	.777	,567	,571
	Management	121	2.64	.695		
28. In general, students receive teacher's feedback on the their evaluation papers	Nursing	135	2.89	.769	1,422	,156
	Management	120	2.77	.576		
29. The assessment procedures are appropriate to the learning objectives	Nursing	133	2.80	.649	1,499	,135
	Management	121	2.69	.517		
30. In general, the evaluation is conducted fairly	Nursing	119	2.89	.635	4,119	,000
	Management	115	2.55	.639		
31. In general, the assessment procedures are negotiated with students	Nursing	135	2.19	.885	3,454	,001
	Management	121	1.85	.667		
32. The assessment system was disclosed in time	Nursing	134	2.99	.736	1,734	,084
	Management	121	2,84	.548		
33. The final classification includes, in a balanced manner, the different elements of evaluation	Nursing	135	2.77	.819	,194	,846
	Management	121	2.75	.674		

Figure 1. Independent Variable Importance

